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A ThinkEdu Initiative for School Students

Vol 4 Issue 1: June/July

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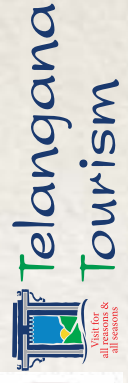
Dawn of Knowledge

*For family weekends
that don't end at the mall.*



Put some real miles in your car and smiles on your family's faces; by taking them on a road trip, to the great Telangana outdoors. Stop by waterfalls, quaint tea shops, even a village toy shop on your way. Camp at Laknavaram lake for the night and the following day; do it all over again, on a new route! Weekends at the mall? They're so yesterday.

To know more about where to drive your family this weekend, log on to www.telanganatourism.gov.in/trailblazers



MEET THE TEAM

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EDITORIAL



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“When I look at the northern lights...I see our ancestors dancing around a sacred fire, lighting the way for us when it's time for us to cross over from this physical world and join them.”
-Molly Larkin, Writer

EDITOR'S NOTE

DAWN OF KNOWLEDGE

Summer break is a time when most of us go and visit our grandparents or head out for an outstation trip with the family. And each time we do so, we bring back with us fond memories, learnings and knowledge from them. It can be your grandma's secret recipe or stories told to you by your parents, told to them by their parents and to them by your great grandparents and so on. It's wisdom passed down in the family.

Even a stranger sometimes can teach us so much. I met one such stranger during a trip; an environmentalist who knew 6 languages and everything there is to know about the city and its history. He had a strong political opinion too. Sounds like a "learned" man, right? Perhaps a professor? No. He was an auto driver! The light of knowledge can shine from anywhere and the good ones will always find ways to share it with others.

As the new academic year begins, we hope you tread on a similar journey with this new issue, Aurora by your side. With the launch of a new volume, we've also created the Imagine App for you to stay up to date with events, news and cool cues on science, tech, history and grammar in under 60 words. Download the app from Playstore on any android phone and let us know what you think. Get back to school and share it with your friends the secret of Aurora and the dancing lights. Don't forget to write to us at imagine.thinkedu@gmail.com.

Your friend,
Nikita Jain.

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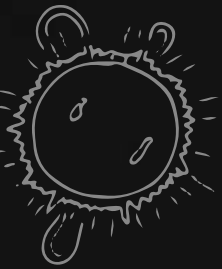
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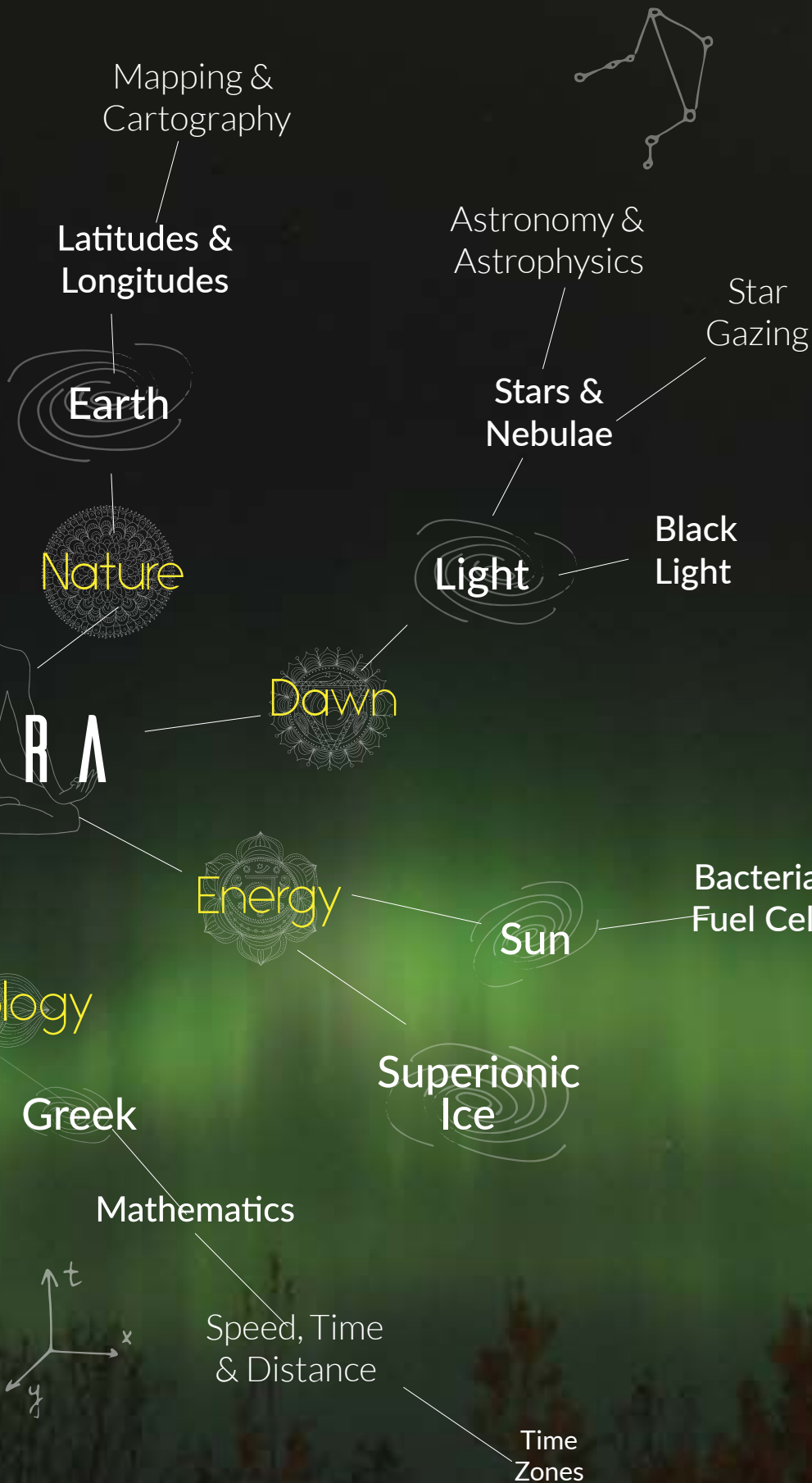
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QR Codes- As you go through Imagine, you will find black and white squares. These are qr codes or quick response codes that are linked to various online sources. All you need to do is scan it using the camera on your smartphone through a qr code reader app available on all app stores.



As the sleeping beauty, Aurora wakes up to the beautiful Northern and Southern lights, we witness the dawn of an enchanting, almost mystical natural phenomena, mapping through ancient civilizations and dwell among the stars above.



What's a mind map?

Pick a random word and connect it to as many things as you can. It could be images, ideas, instances or more words. If you imagine that on a blank paper, you'll observe that all your connections keep branching out like rivers and tributaries. Together, it forms an independent structure, mapping out your thoughts this structure is the mind map. It is a visual representation or a diagram made of several inter-linked words, colours, lines and pictures.

Why should you learn mind mapping?

Firstly, because it's a fun way to learn and study. Secondly, it unleashes your creative side and helps you come up with bright ideas. Creating mind maps facilitates your cognitive process and makes you remember things better.

THE NEW SUPERIONIC ICE IS AS HOT AS SUN?!

UNIMAGINABLE RIGHT?
BUT IT'S TRUE.

Impossible. Ice is cold. It forms when water freezes. How can it be hot?

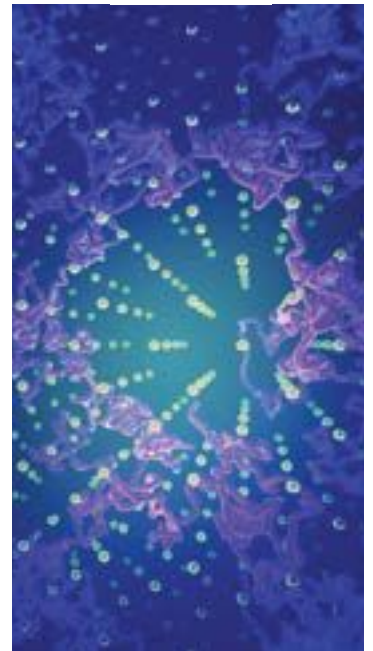
That's just it. This isn't ice. It's Superionic Ice. Under regular conditions, ice forms when you bring it to its freezing point, that is 0°C or below and is a solid. Its density is slightly lesser than that of water and hence it floats in water. But this ice doesn't do any of that. It is a solid and a liquid at the same time.

This is unnatural. How is it even water then?

About 30 years ago scientists had predicted the existence of superionic ice; a phase or state of water that is present in both liquid and solid states, 60 times denser than ordinary ice and formed only under extremely pressurized conditions. They said it can be found inside giant planets such as Neptune or Uranus. Until recently, they were never able to actually create it.

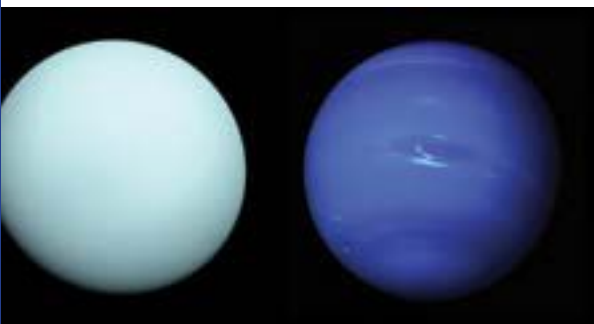
Man hasn't reached the surface of Mars and Uranus. How did they know then?

Like liquid, gas and solid state, water also has this superionic phase. Ice is nothing but a water crystal. They discovered that during this phase, the atoms that makeup water (hydrogen and oxygen) behave very differently. Hydrogen ions* move like a liquid among the solid oxygen.



This is what superionic ice formation may have looked like

Class 6, Science, Chapter 15



It's going slightly over my head but tell me more.

A team of scientists from Lawrence Livermore National Laboratory (LLNL) in California was the first to ever create this ice crystal. They compressed water into a strong crystalline ice. To do that, the researchers used diamond anvil cells with about 25,000 times the atmospheric pressure on Earth. They had to further compress and heat it using laser beams. Then, the superionic ice was born.

How does this prove it to be hotter than the Sun?

Once the ice was ready, the scientists were back at work to know its properties. They just had 10 to 20 nanoseconds to know before it dissolved! It was found that the ice thus formed, melts at 8,540 degrees Fahrenheit or 4,725 degrees Celsius and 29 million pounds per square inch (200 GPa) of pressure. This pressure is about 2 million times the atmospheric pressure on Earth.



Wow! That's incredible. Does this discovery tell us anything about life other planets?

Well, we don't know about life but it does give us an insight into other things. The pictures of the planets' interiors drawn a decade ago to explain the weird magnetic fields at Uranus and Neptune. Planetary scientists also suggest that the insides of these planets can be composed of 65 percent water by mass, plus some ammonia and methane.

Ions (n): atoms with an electrical charge

LIGHT CAN BE

BLACK?!

How's it even possible?

Colour is not really a physical property. When we see color, we experience light of that wavelength reflecting off an object or emitting from it. Mix green, blue and red (primary colours) paints and you get black paint. But, mix green, blue and red light and you get white light. Shouldn't the result be same?

Talk about preconceived* notions*! Do you have any proof to back this up?

Try this simple experiment. Dim-off all the lights around you in a room and have the phone screen on. The colour that you see is white. Now when you have a screen with a bigger size and brighter light in the background of the phone screen, the phone light automatically looks black. When the same phone screen is taken away from the background, you'll be able see white light as you did in the first.



When you mix green, blue and red lights and you get white light

What just happened? Was the phone emitting black light?

Hold that thought and observe this. An image with a black dot is projected on a screen using an LCD Projector. When your hand or your head obstructs it, we find the shadow to be lighter than the black dot. Is the projector emitting black light?

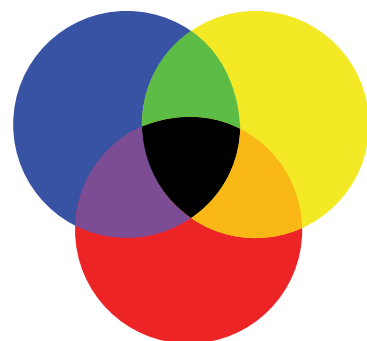
Shockingly, yes! It's all in our heads. What we see are different wavelengths of light as different colours. There's no real proof that the shade of a colour one person sees is the same as what another sees too. Just as colours can be changed by mixing the shades of paints, light can also have different colours when mixed and matched with other wavelengths.

Okay, you have to solve this puzzle now!

In physics, black and white are not colours. Black is the absorption of all visible light and white is the reflection of all visible light. Paints contain pigments that absorb and reflect light. They are such that the colour they reflect off is the colour of its name and ultimately, what we see. When you mix primary colour paints, pigments absorb all light whereas when light (rays) are mixed, they produce visible white light.

So wait! How can light be black?

Therefore, it can be inferred that white and black are shades of the same colour. It's just like how brown is a darker shade of orange. Colours that you see are not exactly the same colours the other see. It is what we perceive in our mind. If black and white are the shades of the same colour, Light Can Be Black!



When you mix green, blue and red (primary colours) paints, you get black paint.

Perceive (v): become aware or conscious of
Preconceived (adj): Idea formed before having the evidence
Notion (n): idea

THE NIGHT FULL OF SHINING ARMS

Nebulae and their Stars

It's an obvious thing that we lose count while counting the stars in the sky. An average human being can count 3000 stars with their naked eyes. Keeping the count aside, let's find out what exactly it is like to have a life of a star!

The Star Factory

The pitch dark night sky holds all the secrets about the life and death of stars. All this happens in the fuzzy clouds of glowing gas- the Nebulae. The word Nebula comes from the Latin word for cloud. When seen through a regular telescope, Nebulae look like cotton balls. But, through high-tech telescopes, they look like huge structures of different shapes and colors that indicate the birth and the death of stars.

The Stars are burning, always.

The twinkling stars actually are a burning mass of hydrogen gas that is held together by its own gravity. Energy is released when two hydrogen atoms join to make helium. Stars too have life and death! The primary gas, hydrogen is the fuel which is used by the stars to stay alive. They fade and die when this fuel is fully consumed.

Imagine Fact:

The Sun is the closest star to the Earth and will die like the other stars. However, that will take another 5 billion years. It will produce a beautiful planetary nebula when it dies.

The Typical Types

Astronomers have studied the Milky Way for the last 200 years and found different types of nebulae with different colors and shapes. Some primary types of Nebulae include-



Emission Nebula

An Emission Nebula is a group of gases that glow. Of these, the Cat's Paw Nebula looks like a huge paw print on the sky.



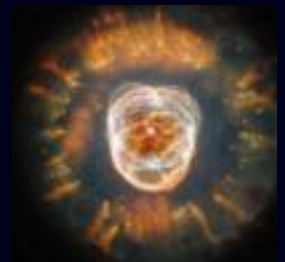
Dark Nebula

It is a cloud of gas and dust that blocks the light from stars behind it. The Horsehead Nebula is a dark Nebula that looks like a seahorse raising its head from a glowing ocean.



Reflection Nebula

A reflection nebula is seen only because of the light from nearby stars bouncing off it. The Witch Head Nebula under this type, glows mainly due to the light reflected by the bright star Rigel.



Planetary Nebula

A planetary nebula is usually round which looks like the disk of a planet. It is actually an expanding blanket of gas around a dying star.

Until now there have been 100 billion stars discovered that make up the Milky Way. This is a miniscule* portion of the universe yet our galaxy is lit and alive with star power.

Imagine This:

What will happen when our Sun dies? Scientists now have an answer. Can you find it out?

As much as we plan things in advance, we are still at the mercy of the weather. We cancel our holidays when it rains, take a day-off when it's too hot and shift our timings during the cold winters. It's the nature and its for the weather to decide whether we get to execute our plans or no.

The root cause- Sun

The Sun and its heat is the reason behind the formation of the weather. Just like the way boiling water gets heated up and expands, the Sun heats up the atmosphere and the layers of gases surrounding it. The masses of air that get influenced by the Sun's temperature tend to travel in big chunks. These masses can cover thousands of square miles. All this movement gives us weather. There's a wide variety of it, too. From the wildest storms of winter to the nicest sunny days of summer.

The geographical partiality

The difference in the weather in different geographic locations is because of the Earth's surface and its influence on the air masses. The warm and wet surfaces like the Gulf of Mexico make hot and humid air masses. The cold and dry areas like northern Canada make for cold and dry air masses. These air masses are called high pressure systems. It is so, because the air is under high pressure, just like the air in the bicycle tyres. Air masses are relentless. They bump into each other as they travel.

The equipments of fortune telling

Weather forecasting and the reports are highly depended upon before planning anything important. The weather forecasters, of course don't look out the window and prepare their reports. They rely on the machines that bring out authentic weather information across the globe. The satellites launched into the orbit of the Earth, the planes and the weather balloons that go up are the means to gather information everyday. But nature doesn't always follow a single pattern. Hence, a forecast is only a good guess but not a guarantee.

How's the

Weather

T O D A Y ?



Weather Vane

IMAGINE FACT:

The oldest and the most familiar piece of weather equipment is the Weather Vane. Weather Vanes have been around since the ninth century. They are situated on rooftops and its arrows point directly into the wind, indicating the direction from which the wind is blowing

Some popular weather equipments:



Weather Balloons:

These balloons carry radiosondes, battery-powered instruments into the atmosphere. They track temperature, air pressure, and humidity in the atmosphere.



Weather-monitoring equipment:

These machines are mounted onto the airplanes and get flown directly into storms to take measurements.



Radar equipments:

These equipments shoot beams into clouds and the beams bounce back to antennas at the radar stations. They are turned into pictures on the screens of radars and help meteorologists track storms.

Making a DIFFERENCE with Tejaswini Uma Sudhir

Name	: Tejaswini Uma Sudhir
Mother's Name	: Uma Sudhir
Father's Name	: Sudhir T Sahasranaman
Age	: 14 years
School	: Gitanjali Devshala, Secunderabad
Interests / hobbies	: Playing Piano, learning karate and vocal music, reading and writing
Achievements	: Student Editor for school magazine, Made it to the top-15 in Inner Venture-National level Entrepreneurship Competition and national level Spell-B competition

What made you choose the path of journalism?

Journalism has always been my passion. Both my parents were with the news 24*7. They have been a great source of inspiration to me. My grandmother who took care of me in their absence nurtured me and helped me gain a direction.

What does a normal day in your life look like?

It starts with me getting ready for school, followed by rigorous learning of curricular and extracurricular subjects. Then it moves to pursuing my hobbies- music and karate. Then it is followed by the most favourite part of the day, dinner, where I get to spend quality time with my parents discussing various issues across the world.

Why do you want to become a journalist? What provokes you?

One thing is ensured that a journalist's life will never be boring. Everyday is a new day. Everyday you get to witness and write new stories. You get to see the truth and tell the truth. There will be a tough working schedule each day, but every minute is worth it. Since my childhood, I have seen my mother covering real-life stories. Of those, the stories of the farmers and their hardships have always touched me.

At an age when most of us are occupied with homework and concerned about how we look and what we'll become, young Tejaswini seemed to have already figured it out. Following in the footsteps of her parents, a mic in her hand and the world as her audience, she has set out to achieve her dream of becoming a journalist.



As a journalist, I want to achieve transparency and accountability. A true journalist is born when her/his story has an emotional connect with them

Anything that touches my heart will definitely provoke the journalist in me.

Do you have any role models?

Journalists Nidhi Razdan and Rajdeep Sardesai. Besides them, Sundar Pichai is my role model, for all his chase and hard work.

What advice would you give to your peers who'd like to become journalists too?

Avidly read newspapers, watch news on television, follow digital media news, start writing small articles by yourself, learn how to talk in front of the camera and broadcast yourself, learn about different editing softwares.

What keeps you going?

I want to excel in everything that I do and to be better than my best each time.

SCHOOL OF THE MONTH

NIS Taraz



The Nazarbayev Intellectual Schools (NIS) are a network of schools for students of age 5 to 18 across the country of Kazakhstan. The schools are named after Nursultan Nazarbayev, president of Kazakhstan. Each school focuses on a specific set of subjects of students' choice. Instruction is trilingual, in Kazakh, Russian and English. One of the schools in their network is NIS Taraz whose values and achievements set a benchmark for the system of education.

The Vision:

Every graduate should be empowered with knowledge, skills and values of the school to contribute to the development of the country.

The Mission:

To enhance the development of the students into intellectual and healthy individuals, who are ready to make a contribution to the country and global world.

Motto:

Excellence and Leadership in Education

Set of Values:

- Patriotism
- Wellbeing (healthy, culture, happiness)
- Collaborative culture (respect, open-mindedness, responsibility)
- Honesty
- Transparency
- Self-awareness

The System of Education

Educational achievement of students are assessed on a criteria based system to achieve high quality assessment procedures with international standards and suited to the learning needs of each student. This is to aid development of the student, increasing their interest and motivation to learn, relieving anxiety and fear of evaluation.

Sports, Art, Intellectual and Technical training

To develop the creative, physical and intellectual potential of students, circles and classes on interests are held. 13



A number of extracurricular and elective courses are provided within the country and abroad on the basis of research. Special importance is given by the Intellectual school of Taraz for social projects and practices.

Important Activities and Events

Through the activities and events conducted by the school, students realize their versatility and creative potential. The school community "Shanyrak", organises expeditions "Tugan elge Tagizym", "2 weeks in the village", "10 days at the parents enterprises", "TEDx", "Wikipedia", "Serving the Society", "Kazakh songs", "Leadership Lessons", etc.

The School Library

Since 2013, the school has had a functioning school library, the main task of which is the provision of informational resources for both school children and teachers. It's also a multifunctional media center. The library of the school library contains more than 29126 books.

Workshops

The school conducts workshops for teachers of secondary schools in the Zhambyl region. In the of academic year 2017-2018, regional and district level workshops were held, in which more than 2,300 teachers from 200 schools of the city and the region took part.

DECODING EARTH'S LINES

The Lines of the Earth

The Earth is divided into grids of horizontal and vertical lines; degrees of longitude and latitude which helps us measure location and time using a single standard. It is a universal coordinate system used even by the GPS technology to locate places. They are imaginary, man made lines.

The horizontal lines are latitudes while the vertical ones are longitudes. They are read in "degrees".

If you're lost in a place you've never been to before, surrounded by nothing but nature with no mobile phone, no GPS, how would you know where you are? The nearest settlement is not far away too but how would you navigate to get there? Let's say you now have a map and a compass with you but to use them you need to know about the lines that are stretched across the map - latitudes and longitudes.

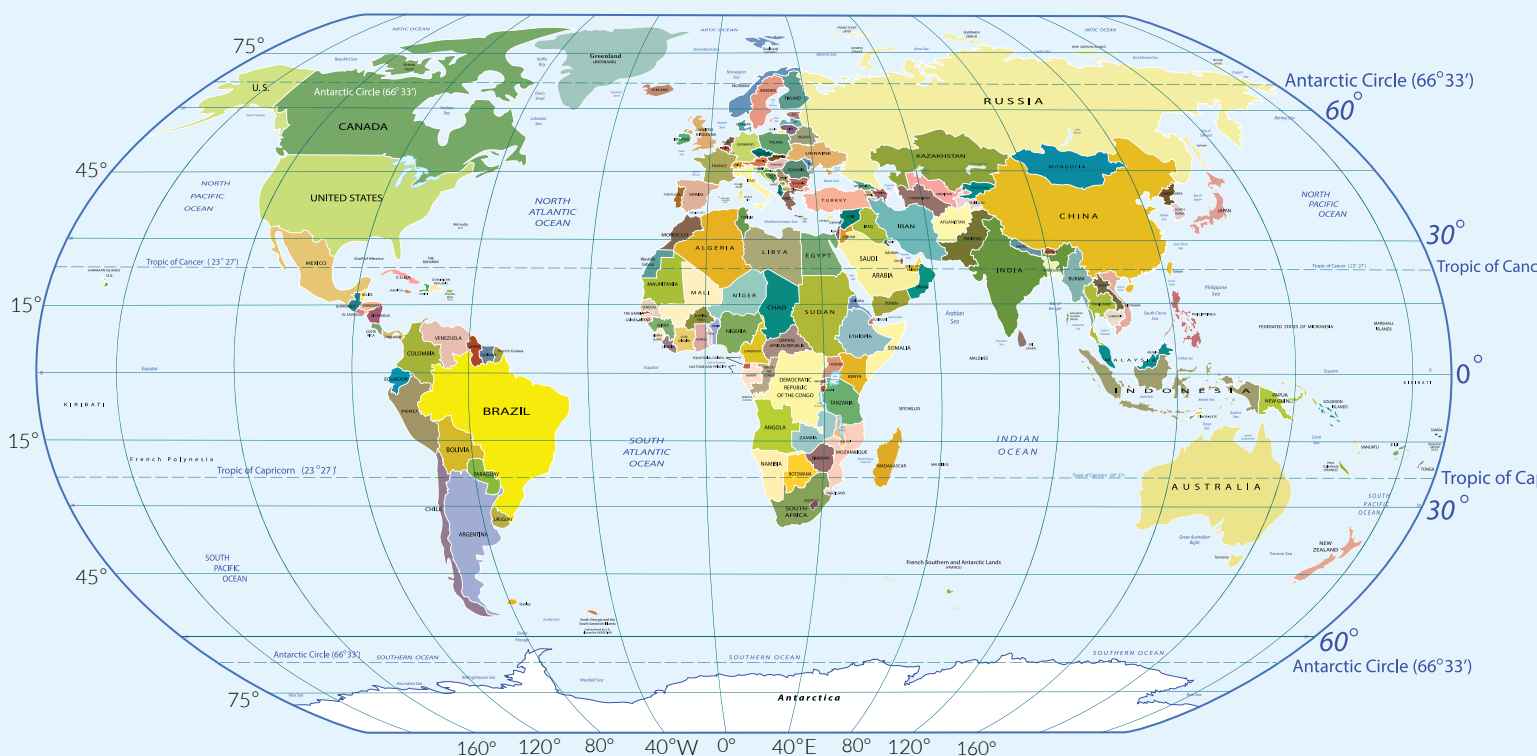
The earth is divided into half by a latitude called the "equator" and is denoted as 0° while longitude equivalent is called the Prime Meridian, also denoted as 0°.

We measure latitude in degrees north or south of the equator. Longitude is the angular distance east or west of the prime meridian.

How to read location

Just as you would read time in hours, minutes and seconds, a location will be a coordinate set of degrees, minutes and seconds. And as you'd specify AM or PM in time, you specify the hemispheres (North, south, East, West) of earth in the location. Each degree is about 69 miles wide, which is broken down into 60 minutes. Each minute is broken down into 60 seconds. Overall, it is denoted in DMS (degrees, minutes, seconds). There is a lot of coordinate geometry involved here.

Now, consider the world map figure. If you were "40°N, 100°E" which continent would you be on? Asia. The latitude of Hyderabad, Telangana, India is 17.387140, and the longitude is 78.491684. The gps coordinates are 17° 23' 13.7040" N (read as 17 degrees, 23 minutes, 13.7040 seconds North) and 78° 29' 30.0624" E (read as 78 degrees, 29 minutes, 30.0624 seconds North).



ACTIVITY 1

1. What ocean is found at 20° south and 100° east?
2. What continent is at 20° south and 140° east?
3. What ocean is at 40° south and 160° west?

ACTIVITY 2

Google earth and google maps have satellites that use latitudes and longitudes to locate you and your destinations. Next time you enter a destination, check out its coordinates on the map and understand what it means.

MAP READING

Reading and creating a map requires more than just the knowledge of coordinate geometry. There are universal signs, symbols and metrics that you need to be familiar with. Here are a few important ones

• Legend

A legend is something along with every map and is required for a map to make sense. It's a key with a set of colours and symbols that denote something particular.

• Topographic map symbols

These are signs, icons or symbols that show what the topography of the place is like. For instance, a river is showed

like this . Hills are shown as . They can be coloured too.

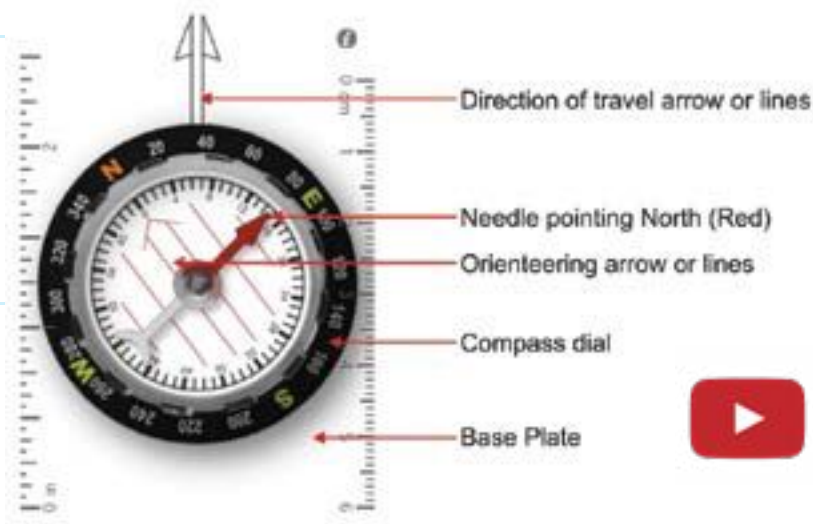
• Scale

It is the ratio between the distance on a map to the actual, corresponding distance. For example, 1 cm on a map can be 100 Km or 10,000 cm in reality.

HOW DOES A COMPASS HELP?

A compass is essentially a needle and a tiny magnet whose poles align themselves with the north and south poles of the earth. This helps in finding out the direction you're heading in. In any magnet, the north pole is attracted to another magnet's south pole and vice versa. Similarly, with a compass, the south pole (known as the north end) of the compass will point to the north pole side of the earth.

If you're lost in wilderness, you'll need to locate where you are using the topography around you and finding that on the map. For instance, if there are hills around you, look for hills on the map. After you mark that point, you'll need to mark your destination point, draw a line and align that with your compass. Watch this video to understand how.



THE NAVIGATING STAR

Before the compass, travellers used stars to navigate. Stars seem to keep shifting their positions due to the rotation and revolution of the earth. But there is one star that always has the same position, no matter what. It is called the North Star or Polaris. The positions of other stars with Polaris as a reference point remained the same.

Geolocation is the use of internet and software to find out the real time location of an object or person. It is one of the most useful and powerful advancements in technology as it is used from basic navigation to Internet of Things. 50 years from now, how do you see this technology being used in our everyday life? Will it overtake our activities and machines? Write to us at imagine.thinkedu@gmail.com



MESOPOTAMIANS

About 12,000 years ago, the Early Men were just nomadic. Slowly they found that the seeds they had been eating could be planted to grow more food. Gradually, these people settled down to villages. They grew crops and raised animals for their livelihood. Some of the first permanent settlements were at the mountains of Mesopotamia, which means (land) between rivers in Greek. It is the modern day Iraq.



Picturization of The Mesopotamian Settlement

THE FLASH BACK

Rather than measuring in centuries, the history of Mesopotamia is measured in millennia.

The first classic cities were developed around 3500 B.C. For the next 3,000 years, kingdoms rose and fell, empires expanded, outsiders conquered and were repelled. There were three dominant civilizations played a crucial role at various times- the Sumerians, the Babylonians, and the Assyrians.

Sumer 3500–2006 B.C.

The first civilization of Mesopotamia developed in Sumer, a marshy area between the Tigris and Euphrates Rivers. As the time passed, the Sumerians turned their open villages into walled cities. As these cities expanded, they became city-states ruled by leaders.



Life and people of Sumer

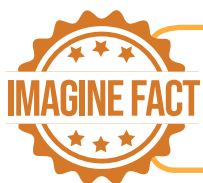
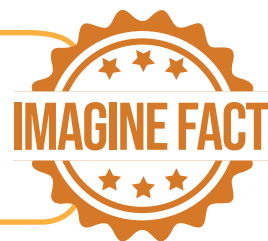
Assyria 1115–612 B.C.

In hilly northern Mesopotamia, the city-state of Assyria slowly grew to become a powerful kingdom. They used chariots, battering rams*, and armored horses in 689 B.C. Assyrians also overtook other independent states around them. They uprooted* the people they conquered and turned them into slaves. Assyrian king Ashurbanipal (668–627 B.C.) created the first national library. Clay tablets were stored on shelves in baskets. These were cuneiform tablets. Cuneiform is the ancient script of Mesopotamia, Persia, and Ugarit.

Babylonia 1792–539 B.C.

The city of Babylon under its ruler Hammurabi (1792–1750 B.C.), became the centre of a strong government and a great cultural and religious hub. Nebuchadnezzar II built Babylon's temples and palaces with lavish gold and silver decorations. One of his best-known works was the Hanging Gardens of Babylon. They were called one of the seven wonders of the ancient world.

In 2017, 3250 year old clay tablets were discovered in Bassetki, Northern Iraq. As archaeologists decoded the writing on them, they found the location to the ancient royal city Mardaman. It was the seat of an Assyrian governor.

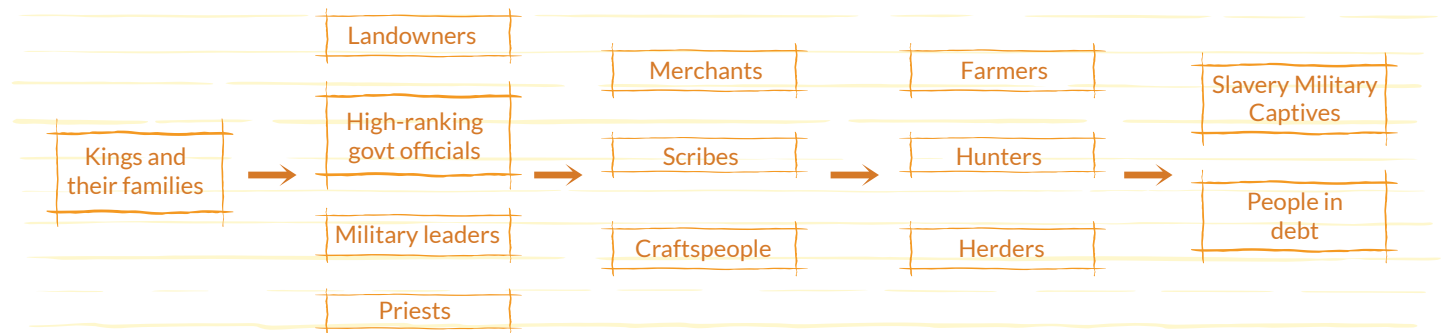


The Babylonian map is the earliest known map and was made 2,700 years ago on a clay tablet.



The life during Mesopotamian Civilization

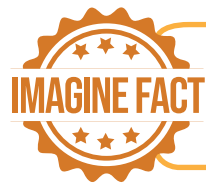
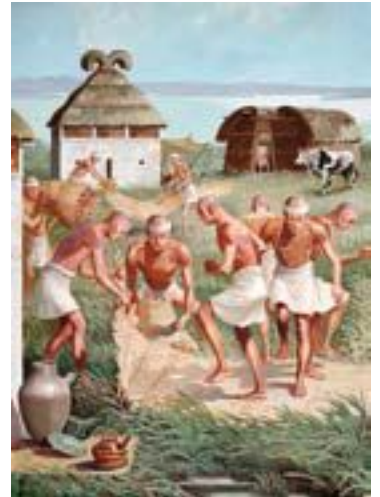
A Hierarchical life



The Mesopotamian style of living:

The houses of the Mesopotamians were made of mud bricks and their cities had maze-like architecture and winding streets. They had drainage system and flush toilets. Their early garments were knee-to-calf length skirts worn by men and women, Women spun sheep's wool in hand-spindles.

They traded the extra crops and clothes and fetched wood, gold, silver and precious gems and resources in return. The farmers raised cattle, sheep, pigs and goats outside the cities and used them for meat, milk and leather. They predominantly grew fig, pomegranate, and other fruit trees in their gardens. They were also full of cucumbers, peas, onions, garlic, lettuce, lentils, turnips, and chickpeas. Along with the masons, there were artisans skilled in pottery, metal works, basket weaving, carpentering and leather works.



Mesopotamia didn't have many trees for making paper. So writing was etched* on clay tablets.

Surprisingly, Mesopotamians invented skateboards, roller-blades and bicycles. They were the pioneers of the using wheel for transportation and pottery. They made animals to pull heavy loads and used chariots during battles through wheels. The Assyrians were the first ones to develop an "armored car" which could ram and smash a hole in the wall. The Mesopotamians were the 'first' in a lot of things. They were the first chemists in the world, first to use natural materials to prepare soaps, herbal remedies and dyes and also use baked-brick ovens to boil and fry food.



Invention of wheels by mesopotamians

They were astronomers who studied stars and constellations. They named the constellations and divided the sky into 12 sections. The names for the 12 signs of the zodiac are based on Latin and Greek versions of Mesopotamian names.

Mesopotamia was indeed a hotbed of invention and innovation, scientific advances and new ways of thinking and living that continue to shape and influence our lives today!

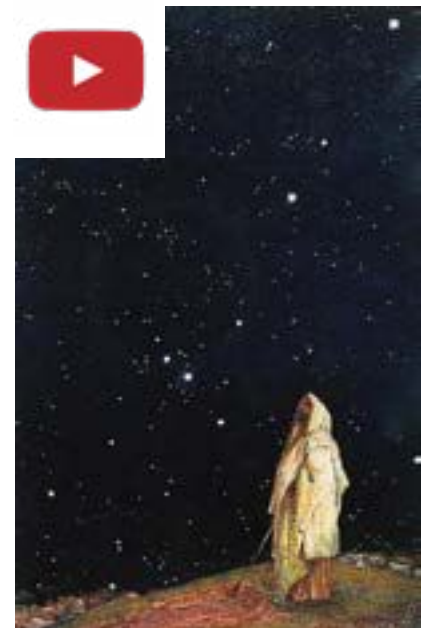


The Mesopotamian civilization settlement was huge and powerful. Considering Egypt is one of the neighbours, do you think they influenced the Egyptian civilization? If yes, how? Send in your answers to imagine.thinkedu@gmail.com.

Uprooted (v): pull out of the ground.

Ram (n): a heavy object swung or rammed against a door to break it

Etch (v): Carve on a material with protective layer



The constellations named by the Mesopotamians

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 - 3) Competitive Exam Skills

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BATTERY

THROUGH

BACTERIA

Bacteria are powerful and important creatures. Some can make us sick while some are necessary for us to function. Ever thought that they can generate electricity as well? This experiment will show you how we can extract electricity from these microorganisms.

Things that you need:

- Soil Mud
- Anode (Green insulated wire)
- Cathode (Orange insulated wire)
- Capacitor
- LED
- Hacker board
- Microbial Fuel Cell Vessels of MFC
- Voltmeter



(All the above 3 things are available online on Amazon.in)

Science behind it:

The cell that we created, is a Microbial Fuel Cell (MFC) where naturally occurring electrochemical processes of anaerobic bacteria is used to generate electricity. To evaluate the overall electricity generated by the MFC, we need to measure the voltage across a fixed resistor that is attached to the MFC. This can be done using a voltmeter placing parallel to the MFC.

Procedure:

1. Fill the MFC vessel with the soil mud that was collected.

Put the anode, with the green wire on top of the mud in the vessel. Make sure that the green wire is not stuck down in the mud



3. Fill more soil mud to complete the vessel up to the line marked "5" (marking 5 cm). After that, run the green wire along the side of the vessel.

4. Next, place the cathode on top of the mud. Press it until it turns flat. Again, make sure that the orange wire from the cathode should be sticking out of the top side.



5. Let the mud rest in the vessel for a few minutes and after that carefully pour the excess liquid from the mud (if any) into another container.

6. Grab the white plastic lid of MFC container and pass the wires through the small holes in the lid. Make sure that the wires are arranged systematically so that the Cathode (orange wire) is on the left and the Anode (green wire) is on the right following the semicircular indentation on the lid.

7. Take the hacker board (the small green circuit) and attach it into the rectangular indentation* of the lid.

8. Locate the "+" and "-" ports (i.e., holes) on the hacker board. Plug the Cathode (orange wire) into the "+" port and the Anode (green wire) into the "-" port.

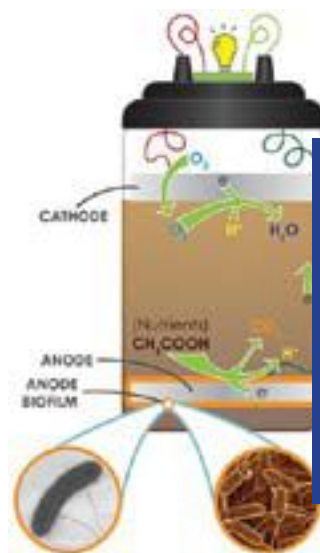
9. Plug the blue capacitor (the small, cylindrical item with two longer metal prongs) into one of the ports.

10. Plug the red LED below the capacitor into the rest of the ports.



There! You are ready with the Microbial Fuel Capacitor

Note: The LED will only work if inserted in systematic orientation.



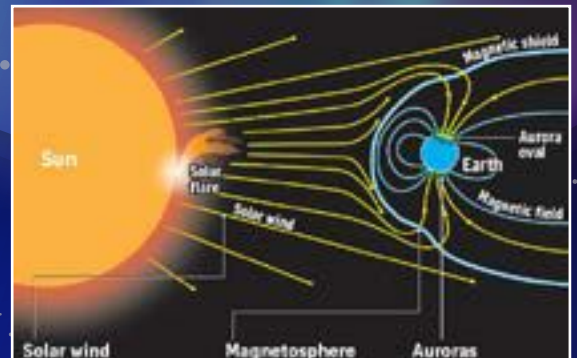
THE AURAS OF

When the usually white, blue or black sky stars glowing with orange, red and green hues* fading into the sunset, you know something is out of the ordinary. It is nature's very own bright and colourful light show that resemble curtains swaying in a breeze and look like the crowns of light. These spectacularly dreamy lights are called Auroras and can be seen in the polar region.

The Auroras near the North Pole are known as Aurora Borealis or Northern Lights while the one near the South Pole are called Southern Lights or Aurora Australis. The name Aurora is derived from the name of the Roman goddess of Dawn. Borealis is derived from the name of the Greek god of north wind, Boreas. These lights appear really high in the atmosphere; so high that even the closest part of an Aurora can be 60 miles high and extends 200 miles upward.

How does nature create Auroras?

The Auroras are the result of collisions between particles from the solar wind (wind from the sun) and the atoms in upper atmosphere of the Earth. The Earth has an iron core with an enormous bar magnet buried deep inside. Like every magnet, it has two poles, North and South and a magnetic field called the magnetosphere that runs about 35,000 miles into the atmosphere. Its strongest points are at the poles. The Sun also has an atmosphere and a magnetic field. Since the sun's atmosphere is mostly hydrogen, its heat boils and pushes away hydrogen's electrons and other particles surrounding it. These electrons and the other particles reach the Earth's atmosphere where they collide with oxygen and nitrogen atoms, releasing energy as light energy. Most Auroras take place within a ring around the magnetic pole and the colors of an Aurora depends on the atoms involved.



Green - oxygen, up to 150 miles in altitude
Red - oxygen, above 150 miles in altitude
Blue - nitrogen, up to 60 miles in altitude
Purple/violet - nitrogen, above 60 miles in altitude

The Earth's magnetic poles and Earth's geographic poles are not the same. For example, Boston is at magnetic latitude 51.7° N and geographic latitude 42.3° N



When and where can one find them?

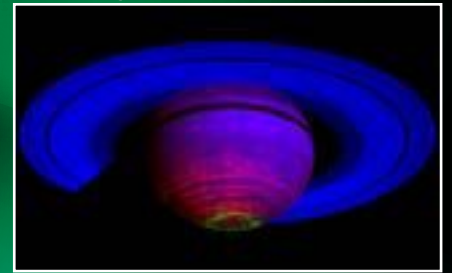
Most Auroras take place during the seasons of spring and fall in the North and the South Poles. They last for 60 to 90 minutes. The best time to see them is when it is the darkest at midnights. Earth is not the only planet in the solar system to have Auroras. Most planets have magnetic fields. All that is needed for these beautiful lights to appear is some amount of atmosphere and a collision of high-energy particles.



Aurora on Jupiter

THE AURORAS

Sometimes, even when no magnetic field is present, Auroras still occur, but are less organized. Saturn and Jupiter have Auroras similar to Earth's. They have also been observed on Neptune and Uranus. Venus and Mars have them very irregularly because they have no magnetic fields. In 2017, another type of Aurora was discovered. Named, Steve, it appears as a strip of purple-green light extending thousands of miles.



Aurora on Saturn

The best places to watch the Auroras:



North Sweden

In Sweden's northernmost town of Kiruna, there is mountainous Abisko National Park with beautiful natural view and plentiful reindeer. A short drive to the town gives you a good spot for Aurora viewing.



Finland

In the Lapland region of Finland, Rovaniemi serves as a gateway to the frozen snow-covered spots where trees called Tykky sculptures give a great feel of the northern lights.



Greenland

At the extreme North, it's pretty amusing to see the northern lights, such as the case of Northern Greenland. The beautiful Auroras and attractions like Qaleraliq Glacier, which has small floating icebergs even in summer is capable of taking everyone's breath away.



Tasmania

More often than not we hear about the Northern Lights than the Southern Lights. This is because there are fewer locations to see Auroras in the South Poles. The places to visit in the trip to Southern Hemisphere is Tasmania in Australia where a dark sky will give a great sight to the beautiful Auroras.



New Zealand

Another place in the South Pole that gives a great view for the Auroras is New Zealand. The Stewart Island and also Lake Tekapo are the most beautiful places that are recognised by Dark Sky Reserve to see the Southern Lights.



5W's & H

Where is India's "Act East policy" talk taking place?

"Look East" was a foreign policy of India introduced in the early 1990s. It was a policy to reconnect with the other nations of Asia, to the East of India for economic welfare and globalisation. PM Narendra Modi continued the plan as "Act East policy" and is covering three-nations- Indonesia, Malaysia and Singapore. India and Indonesia improved their bilateral* ties and made a Comprehensive Strategic Partnership for defence and Indonesian naval port in Indian Ocean. The PM's five-day visit is aimed at enhancing India's strategic and business operations with Association of Southeast Asian Nations (ASEAN).



How old was the oldest spider when it died?

The world's oldest known spider, Number 16, died after a record-breaking lifespan of 43 years. The spider was a female trapdoor tarantula living in Western Australia according to Agence France-Press reports. However, the spider didn't die of old age but was killed by the sting of a wasp. Number 16 outlasted the previous record holder, 28-year-old tarantula in Mexico, according to a study published in the journal of Pacific Conservation Biology. Number 16 was discovered during a spider population study in 1974, and had been monitored by the researchers since then.

Which is the newest entrant into the group chat app?

Yahoo recently entered into the most competitive market of messaging apps by releasing its own group chat app called Squirrel. The app is currently in its testing stage and is listed on Google Play and App Store. To start using the app, one needs a friend who already has the app on their device to invite into a group and use it. Squirrel focuses mainly on group chats, and has many features that helps connecting with more people. The app looked similar to softwares like Discord and Slack, apart from the messaging apps with group chat features, like WhatsApp and WeChat.



The Chennai Super Kings defeated Sunrisers Hyderabad by 8 wickets to clinch their third Indian Premier League title, 2018.



CWG 2018: With 66 medals, India's third most successful Games



What happened in the Karnataka elections?

In the elections held in Karnataka during period of 12 May 2018- 15 May 2018, Indian National Congress, Bharatiya Janata Party (BJP) and Janata Dal Secular (JD(S))were in a high-spirited race. Even after the results were declared, where BJP won maximum seats, they could not claim a majority. This extremely dramatic elections finally witnessed Kumaraswamy government, JD(S) winning it. It was an unexpected end to 10-day political drama after the polls were announced. It suddenly turned out to be a smooth walk for the 58-year- old H D Kumaraswamy, as BJP members could not claim their majority in the floor testing, which resulted in a walkout of Yeddyurappa from the floor. Yeddyurappa said that CM Kumaraswamy was known for his acts of "betrayal" and JD(S)-Congress alliance was "unholy".



Which virus is creating a tension in the nation?



The entire nation was shook by the outbreak of Nipah virus that caused 14 deaths in Kerala's Kozhikode and Malappuram districts. It is a virus that causes severe disease in both animals and humans and is transmitted through contaminated food or directly between people. The natural host of the virus are fruit bats and a batch of five fresh samples from fruit bats were sent to the National Institute of High-Security Animal Diseases. The samples of fruit bats have been taken from the place where four deaths on account of Nipah virus from one family took place. These samples were sent through a special messenger and the move comes after 21 samples from bats and pigs were sent to the Bhopal lab.

When was Sterlite Copper industry massacre take place?

The Madurai bench of the Madras High Court stayed* the expansion of Sterlite Copper's industrial unit in Tuticorin Tamil Nadu. This action was taken a day after 11 people were killed in police firing against the protestors. This smelter* which can produce 4,00,000 tonnes of copper a year, is run by Vedanta's Sterlite Copper unit. The plant has been shut since March 27, 2018. The company had a plan to double the capacity at the smelter to 8,00,000 tonnes per year. Protesters said that the smelter with shorter chimney stacks helped the company reduce costs but harmed the environment.



Bilateral(adj): involving two parties

Stay (n): Stop-off

Smelter (n): an factory for smelting a metal from ore

2018 FIFA World Cup: Players from qualified teams are, on average, 27.4 years old



Serena Williams Makes Stunning Comeback To Reach French Open Third Round

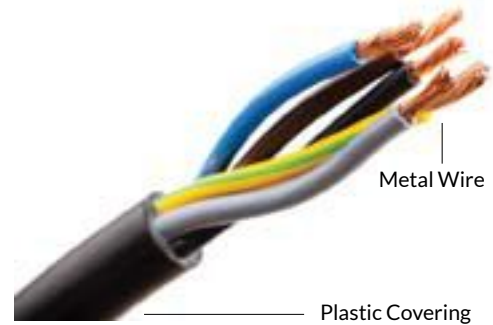


Good, Bad & In-Between

Just picture this. You see someone get electric shocks while switching on a fan. If you want to save them, what is that you do? If you touch them and pull them away, the electric shocks pass through your body too. How do you save them and not get electrocuted?*

You must've heard or seen that people dealing with electrical wires often wear rubber gloves or use a wooden stick or wear rubber slippers. Why are these the ones to the rescue, you ask? Because wood and rubber don't let electricity pass through them. Are there more of such material? Let's find out.

Everything is made up of atoms which have electrons that move about. **Conductors** are materials that allow these electrons to flow freely from one particle to another. Therefore electricity flows through them because the moving electrons carry them. **Insulators** are materials that are the opposite of conductors in their behaviour. They block electricity. The electrons in the insulators are not free to roam as the atoms of the material are stable. A **semi conductor** is a substance or material that can conduct electricity partially, only under certain conditions.



If you see an electrical wire and cut it open, you'll see it has thin metal wires in it and a synthetic covering outside made of rubber or plastic. The metal wires conduct electricity while the plastic insulates it and protects us.

How will you know which materials are insulators or conductors or semiconductors?

Try this experiment and get to know what are conductors, insulators and semiconductors!

What you need:



Three pieces of insulated wire



D battery



A bulb & a holder



An adult to help

What you need to do:

- Connect a wire between the battery and bulb.
- Connect another wire to another end of the bulb.
- Connect the third wire to the other end of the battery.
- Touch the open ends of the two wires to each other to form a circuit and test the bulb.
- Touch the two open ends of the wire to each material you are testing, one at a time.
- If the bulb lights up, it is a good conductor. If it doesn't, it is a good insulator.



Now, try it testing with these materials and segregate them into conductors and insulators:



Iron nails



Fabric



Pencil



Copper coins



Foil



Metal fork
24



Paper



CD/DVD



Porcelain cup



Magnet

SO FAR, SO GOOD!



Everyday we hustle*. Going to different places, covering a lot of distance, completing different things in a particular time, speeding them up when getting late and repeating the cycle next day. Every moment you're making use of speed, distance and time. Let's learn a little about them.

Speed: It is the measurement of how quickly an object moves from one place to another.

Distance: It is the distance travelled in a particular given time

Time: It is the time frame within which a particular amount of distance is covered.

$$\begin{aligned} \text{Distance} &= \text{Speed} \times \text{Time} \\ \text{Speed} &= \text{Distance} / \text{Time} \\ \text{Time} &= \text{Distance} / \text{Speed} \end{aligned}$$

From the above neighbourhood map of Sarah, work out the following questions!

- 1) Sarah walked from her house to her farm at a steady speed of 5 km/h. The journey took 3 hours. How far did she walk?
- 2) She took another route through the town at a speed of 10 km/h and she covered a distance of 7 km. How long did she take to do she go?
- 3) Compare 1 & 2 and decide which one is a better one to take and why?
Sarah needs to go from her farm to college and moves in a speed of 27 km/h in 10 minutes. How far do you think the college is from the farm?
- 4) It is 15 kms from the college to railway station. How long will it take to reach the station if she drives her bike at 5 kmph?
- 5) From railway station to the town it takes 2 ½ hours to reach through train. What should be the speed of the train to cover a distance of 100 kms?
- 6) From town to reach school Sarah needs to take a boat which floats at a speed of 3 km/h. How long will it take to reach the school?
- 7) Now figure out a way for Sarah from school to her house from the map, assuming the time, distance and speed and give us the best plan.



Time passes slower the faster we move. If we flew to the star Sirius at 99% of the speed of light, then flew back again, the people we left behind on Earth would have aged more than 17 years. But you would have aged less than two and a half years.

HOW FAIR ARE YOUR CURRENT AFFAIRS?

- 1) Who invented the first car in the world? _____
- 2) What is India's rank in the health study among 188 countries according to 2017?
(i) 143 (iii) 153
(ii) 156 (iv) 123
- 3) Which country was in financial crisis with its debt increasing beyond 175% in 2015? _____
- 4) The Government of India (GOI) has launched which scheme for online release of LPG connections?
(i) Sulabh (iii) Smile
(ii) Saral (iv) Sahaj
- 5) Which bird was extinct in less than 100 years of its discovery by Portuguese? _____
- 6) In which year did Bhopal Gas Tragedy happen?
(i) 1876 (iii) 1984
(ii) 1976 (iv) 1987
- 7) Who was that famous personality who donated 500 million dollars to the UN?
(i) Bill Gates (iii) Warren Buffett
(ii) David Beckham (iv) Mark Zuckerberg
- 8) Before the world's last male Northern White Rhino, which Rhino got extinct? _____
- 9) Which family does the legend of Yeti belong to?
(i) Apes (iii) Cat
(ii) Bear (iv) Fox
- 10) Which continent is apparently tearing into two halves? _____



So much General Knowledge, so much learning, so many puzzles and riddles. In every issue of Imagine, we had 3 Work-It-Outs published. It's time to dig back for the roots and brush up! Take a quiz and test your memory.

Digit it and Dust it!

HOW'S YOUR SCI-TECH KNOWLEDGE?

- 1) Which city in India has free google wi-fi?
(i) Delhi
(ii) Mumbai
(iii) Hyderabad
(iv) Chennai
- 2) Which site has been pulled out from all Amazon devices? _____
- 3) Upto how much light can silver reflect?
(i) 70% (iii) 95%
(ii) 60% (iv) 85%
- 4) Which type of momentum does the fidget spinner use while spinning? _____
- 5) From where does the Earth's Gravitational Force gets exerted?
(i) Center (iii) Behind
(ii) Right (iv) Left
- 6) Which year did Hiroshima and Nagasaki bombing take place? _____
- 7) Which metal is present in the unexposed film of photographs? _____
- 8) Which process does water go through in a chemical wastewater treatment plant? _____
- 9) What is EHang 184 that can carry a 200 lbs person? _____
- Which company offered free international calls to France?
(i) Google (iii) Airtel
(ii) Yahoo (iv) Vodafone



SOME MORE QUESTIONS TO TEST YOU!

- 1) When did the Mughal rule establish?
1456 1545
1526 1762
- 2) Who was the first lady president of India? _____
- 3) Where was the first colony established in India?
Chennai Bombay
Kolkata Delhi
- 4) What does ISIS and ISIL stand for? _____
- 5) Who was the first scientist to say that Sun goes around Earth? _____
- 6) Which technology does Bitcoin use? _____
- 7) Which sport does BWF conduct?
Cricket Soccer
Hockey Badminton
- 8) Which part of the country did the biggest famine strike during colonisation? _____
- 9) Which law does the robot in Wall-E use? _____
- 10) The 'Right to Privacy' was established in which year? _____



DIFFICULTIES

Posed Due to High Fee Structures in the Private Schools



-Mrs. Maheshwari, English Lecturer at Avanthi Degree College



The aim of education is to impart knowledge. Not about facts but about wisdom and values. But these motives seem to have got lost in the present education system of the country. It has become more commercial and business-oriented rather than empowering the students through knowledge. It has indeed proved to be one of the easiest and the best ways to fill the pockets of the bureaucrats.*

This is the result of lack of Government's efficient supervision and conviction to run and create a structured system on par with quality and equal education required by all the students of the country. Though different Governments have initiated their own schemes to improve the quality of education by supplying books, food, uniforms etc. free of cost and cutting down the fees for the less privileged, it created no impact over the citizens. One of the main reasons for this is lack of quality Human Resource and Staffing.

Private Schools have encashed upon this drawback and invested in Human Resources and Infrastructure to lure* the parents and the students to join them. They put forward their key marketing tools and new ideas to provide all-round development educational facilities to the parents. They introduced smart classes and techno studies with advanced curriculum. With these introduced, they started demanding high fees and adding on so called high-end facilities.

This brought a huge plight to the parents by overburdening and pushing them to the extremes. The parents however, become voiceless when their aim is to achieve quality education to their children. It has become so, pathetically that, better the brand of the school, higher the structure of the fees. If one compromises on fees, they need to compromise on the quality as well. In such a scenario, the middle class is a section of the society which is getting sandwiched.

There should also be a rule that no lawmaker can own a self-financed private school, which is rather a very disgusting scenario.

The lower section, unfortunately, doesn't even fit into the picture. This is an extreme contradiction to the Government's law of providing free and compulsory education for every child below 14. It is the responsibility of the Government to regulate and stop this menace by intervening with the schools' admission policies and procedures. Even the parents should not be going by the mesmerising traps by the over-priced private schools. The whole and sole motive of education should be the benefit of the students and their development so that they grow up to build a better future for our country.

The true TRIUMPHANTS



There's a crack in everything in the world, and that's how the light passes in. The most accomplished* are the ones who are not just unique in their demeanor* but in the way they think and internalise their ideas and ideologies. Here are a few personalities who did their thing no matter what stopped them.

Georges Méliès

Georges Méliès, was a French illusionist, film director and was one of the earliest creators of cinema. He was born in the year 1861 and was a brilliant imaginator. If one ever loved watching a sci-fi movie, or the special effects, then he/she owes a lot to Georges Méliès. He was a true visionary who made the foundation of the cinema so strong that his imagination is still reflecting the films of today. He worked on the cinema in an era when the world was obsessed with science, explorations, and expeditions to other planets. Méliès's most famous film is *Le Voyage dans la Lune* (A Trip to the Moon) in 1902 which was a 13-minute film where a group of space explorers travel to the moon. Impossible Voyage in 1904 and *À la conquête du pôle* (The Conquest of the Pole) in 1911 were his other commendable* works. Google Doodle honoured with their first-ever Virtual Reality (VR) / 360° interactive Doodle.



Sheikh Hasina

Known as the 'Mother of Humanity' who gave shelter to the refugees of Rohingya in her country, Sheikh Hasina is the reigning Prime Minister of Bangladesh. She was born in the year 1947, in Tungipara, Bangladesh. The massacre of Rohingya, also termed as 'Textbook Ethnic Cleansing' has been humanely addressed by Sheikh Hasina who made a place in her country for the Burmese who were tortured by their own country's army. Being the bearer of prestigious 'Nobel Peace Prize' she is the eldest daughter of Bangabandhu Sheikh Mujibur Rahman, father of the Bengali Nation. Massively acclaimed all over the world for her ideologies and movements against autocratic* ruling, she made an anti-Ershad movement with her party and forced Ershad (a notorious politician) to step down from power. She then went on to announce the constitutional formula for peaceful transfer of power in 1990.



Satya Nadella

One of the popular personalities listed in Time 100 2018, tech wizard-Satya Nadella is the CEO of Microsoft Corporation. He was born on 19 August 1967, in the city of Hyderabad, India. After pursuing his Electrical Engineering in India, Nadella ported to US where he studied in some sought-after universities and then went on to secure a job in Microsoft. Steadily his life changed as he progressed and accomplished trendsetting cloud computing technology that made him an important stakeholder of the company owning stocks of million dollars. He became the CEO of Microsoft in 2014 and today he is the highest paid CEO all over the world.

Demeanour (n): Behaviour

Autocracy (n): a system of government by one person with absolute power

The **Home** that Was **Lost & Found**



This story is about 12-year-old Heena from Myanmar. She belonged to the Rohingya community and lived with her parents in the district of Rakhine. She arrived in Bangladesh after going through a lot of hardships. She travelled all along the coast, starving and with no water, surviving without a shelter for years.



It all started in the year 2012 when suddenly militants started dropping bombs in their colonies. To escape them, she randomly boarded a boat to save her life. She had to part from her parents and her brother, Abdullah. For more than 4 years she just kept travelling to find a place that can protect her along with her neighbours. Every time they moved to a new place she inquired about her family but found no luck.

It all started in the year 2012 when suddenly militants started dropping bombs in their colonies. To escape them, she boarded a random boat to save her life. She had to part from her parents and her brother, Abdul. For more than 4 years she just kept travelling to find a place that can protect her along with her neighbours. Every time they moved to a new place, she inquired about her family but found no luck. One fine day she found them in a refugee camp in Bangladesh. Her happiness had no limits when she met them. That evening, Heena and her brother sat together and spent some time. He asked her why they were treated so badly and abandoned from their country. Heena, had gone through so much just to find a peaceful place to live.

She said that they belonged to Rohingya group and their country did not think of them as their own. In order to get rid of them, the government started to push them away. This was happening in other parts of the world too. The partition of Pakistan from India, is also one of the darkest situations of communal differences. The Muslims in Russia and France are facing violence because of the religious disparities*.

The Muslims in Russia and France are facing violence because of the religious disparities*. The Pew Research Centre revealed that there was an increase in social hostility* by the governments itself. Out of 198 countries, Egypt, Nigeria, China, Saudi Arabia, Russia, Pakistan and India have been listed as being intolerant. Besides this, the crime rates such as sexual abuse and murders are also increasing. People are displaced from their homes and are deprived of basic necessities. If this is the case, all the human beings will get burned under the sky in the name of religion and community.

Abdul asked if there was any way out for this violence. She told him about UNO, which keeps striving for world peace. She also told that according to the Pew report, Luxembourg, Canada, New Zealand, Iceland and Ireland are perhaps the most tolerant countries. These countries should keep trying and do their bit to end this menace. The nuclear weapons that cause huge damages to the living should be put down. More people should come forward to promote peace. Both Abdul and Heena wondered if this was ever possible and were thankful they were alive.

Imagine Activity

Write to us about how can the students be a part of promoting communal tolerance in the country and what campaigns can be executed on imagine.thinkedu@gmail.com

Social hostility: the state of ill will and bad feeling for other communities

THE TALE OF AURORA

ONCE UPON A TIME

there lived a King and a Queen. They longed for a child for many years. But one fine day the queen gets visited by a frog who grants her wish of having a girl child. Their beautiful daughter is named after the pleasant dawn, Aurora. The King declares a feast throughout the kingdom on this occasion. The king invites the twelve fairies of the Kingdom missing the thirteenth. She happens to be Maleficent, a fairy with an evil heart. All the fairies bless the child with different gifts. When the twelfth fairy was about to gift her present, Maleficent magically appears. She is offended for not being invited to the biggest feast in the kingdom. She curses Aurora saying, "The Princess will grow in grace and with beauty, being loved by all who know her but before the sun sets on her sixteenth birthday, she will prick her finger on the spindle of a spinning wheel and die." Saying this she disappears in a snap.

Fortunately, the twelfth fairy, Merryweather, changes the spell saying that Aurora will fall asleep and that the only way to wake her up would be through a kiss of true love. The King and the Queen send her to the forest along with the three good fairies disguised as peasant women. They called her Briar Rose. On her 16th birthday, she gets to meet a Prince whom she falls in love with. The fairies understand that it was her 16th birthday and that she needs to be returned to her castle. When she returns to her castle, Maleficent takes Aurora into a trance and pricks her hand over a spindle after which she goes into a deep sleep. The fairies realise that the Prince Aurora met was her true love and that only he can save her from Maleficent. The Prince fights against the evil and saves Aurora with the help of three fairies. He gives her a true kiss of love and wakes her up from sleep. They lived happily ever after!



The story was originally written by Grimm Brothers in 1812 but was adopted and remade by the Disney in 1959. The directors of the movie were Clyde Geronimi, Wolfgang Reitherman, and Les Clark.

Answer the following questions

1. What did the King and Queen wish to have?
2. Why did the King invite fairies to attend the feast?
3. Who was the thirteenth fairy and why did she curse Aurora?
4. What is the curse of Aurora? How does Aurora get relieved from the curse?



Match the following Grimm Brothers stories with their morals

SET-A



(a) Cinderella



(b) Rapunzel



(c) The Frog King



(d) The Owl



(e) The Twelve brothers

SET-B

1. Always help others especially to the needy and the elderly.
2. Do not let flattery lower your guard against your enemies.
3. No one can what is destined to happen.
4. Love is the most powerful force in the world.
5. Always help others especially to the needy and the elderly.

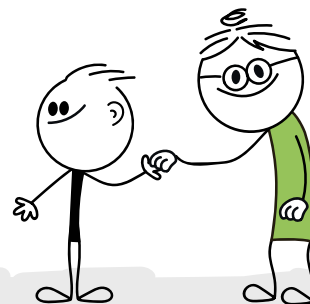
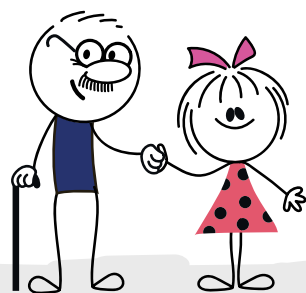
Rewrite the story switching places with your favourite character and send it to us at imagine.thinkedu@gmail.com

The Importance of the

OLD GEN

to the

GEN-Z



-Mr. Krishna, Founder of Krishna Sadan Old Age Home

A society is truly civilized only when people in it value and honour one another. Considering the increase in the abuse of the elderly in India, it is very important to address it in a pragmatic way. If we look at this on a bigger picture, everything and everyone in the society are interlinked. Right from the upbringing of children to how we handle our elders at our home, everything actually matters.

It is often observed that we are taught how to choose friends on the criteria of their behaviour, attitude or culture. Deep inside it is also calculated how useful they are to us. It quite doesn't end here. Much disgracefully, a similar filter is applied to relatives and extended family members. When we do that, we are overlooking the basic fact that, some day, our own people would do the same to us. We would be weighed on how useful we are to the others, than how much we love or are affectionate with them.

One best way to teach kids about how important relationships are and how valuable they are to us, is through their grandparents. Their care and support to their families is something that will be persisting since generations and they are the ones who know the real value of family. Through their experience on how effectively a child's upbringing should take place, the kids don't just get nurtured but also learn how to respect their elders. Elders are the ones who've understood life and what it actually means. Their stories, their knowledge and their guidance truly mean a lot to their younger ones. When there is an interaction between two different generations, there is an interaction between two extreme perspectives*. One which is traditional and another which is modern. This is exactly what the society needs. Striking a right balance between the traditions and the modernity. With the advent of technology, all of us have just given upon understand the real meaning of life. We are finding pleasures in temporary things. Investing the childhood of our children under the supervision of grandparents will bring out the best in them. We need to teach children the real motto of life where they should be finding happiness in togetherness.



About Krishna Sadan

Krishna Sadan is a voluntary organisation working for the comprehensive development of the elderly with emphases on care, support and social policy issues concerning the elderly. It has a long stay home and also a transit home facility in the same campus on outskirts of Hyderabad. Besides providing free shelter, food and health services, they also provide emotional support and counselling services for the needful elderly and also their caretakers. India shall soon be one of the countries with highest population of elderly. People at Krishna Sadan are striving to make sure we would be a home for most ageing friendly cities of the world. Over the last five years we could reunite 84 elders with their families.



Perspective (n): A point of view

The Populars of the



The extreme conditions of the polar regions surprise the entire world about its ability to bear the flora and fauna. As we try to understand how this can be possible without adequate amount of sunlight and water, these species prove to be rather special to fight these unique conditions.

Fathoming the Flora

Plants in the polar regions are known to growing together and close to the ground. Many Arctic and Antarctic species are able to photosynthesize in extremely cold temperatures as well.

Popular Arctic Plants:

Arctic willow



An arctic willow is a dwarf shrub that is quite popular in Arctic regions. It is food for the animals like caribou, musk oxen, and arctic hares. Because of the shape of its leaves, the indigenous people call it the "tongue plant".

Pasque flower



This plant is found throughout the north-western United States up to northern Alaska. It's a covering of silky hairs that provides insulation. Wind flower, Prairie Crocus, Easter flower, and Meadow Anemone are its other common names.

Bearberry



A Bearberry is an evergreen plant with low-growing leathery leaves. It has silky hairs that provides protection from the cold and wind. The plant was named as Bearberry because the Bears of this region are fond of its red berries.

Popular Antarctic Plants:



Antarctica has two popular and native plants- **Antarctic hair grass** and **Antarctic pearlwort**.



These plants are found near the seashores of the west coast where the temperature is mild and there is more precipitation.

The Fauna fam

The Arctic and Antarctic animals adapt to the extreme conditions of polar region and hibernate in extreme cold seasons.

Famous Arctic species:

Arctic hares:



Arctic hares are species found within extreme environment of northern polar region. Their thick coat of fur and specific habits help them to survive within extreme cold climate of polar region.

Muskox:



Muskox lives within frigid Arctic tundra areas. The long shaggy hair helps them to survive within dangerously cold climate. They have short inner hair and that layer is covered with long thick outer hair.

Walruses:



The long tusked walruses live within frigid Arctic circle. They live in groups that have thousands of members. Both male and female walruses have strong tusks up to a length of 1 meter.

Famous Antarctic species:

Leopard seals:



Leopard seals are built for speed and have a large powerful head. They are fierce predators and eat krills to penguins to the young of other seals.

Chinstrap Penguins



Chinstrap Penguins are particularly noisy and aggressive. They along with many other species of penguins return to the same colony each year and often settle within a very short distance of the same nest site.

Krills:



Krill are a small semi-transparent crustacean like a shrimp and live for up to 7 years. They feed on huge quantities and belong to the animals that make up the zooplankton*.

Zooplankton (n): Consisting of small animals and immature stages of larger animals

STELLAR OCCUPATIONS

If you're one of those people whose fascination for the cosmos go beyond stargazing, whose curiosity of the universe's mysteries causes you to question the stars, then you may be destined to become an astronomer or an astrophysicist.*

ASTRONOMER

What does an Astronomer do?

Just gaze the beauty of sky. Kidding! The Astronomers are the time travellers. They travel way back in time and find when the universe was born and observe the light coming from stars, planetary systems and galaxies. They create theories, perform experiments and collect observations that complement each other. They build computational models to simulate* and visualize the behaviour of complex systems of objects present in the universe.

Just imagine gazing at the stellar objects, so beautiful, so celestial. Not with the naked eyes but high-tech devices and telescopes, working with powerful supercomputers and top-notch digital cameras to gather huge amount of data for some sets of images or graphs.

How to become an astronomer?

Physics, Math, Chemistry and Programming are the key subjects for Astronomy. Another side of an astronomer's career is to communicate the results of their work to the other astronomers for which one has to master the language of English. Psychology and Social skills must also be present in a list of subjects for the future astronomer.

BEST UNIVERSITIES FOR ASTRONOMY:

Massachusetts Institute of Technology (MIT)-United States

Indian Institute of Astrophysics - Bangalore, India

National Centre for Radio Astrophysics - Pune, India

ASTROPHYSICIST

What does an Astronomer do?

An Astrophysicist is someone who is an Astronomer and a Physicist. They explore and study the physical properties of the stars, planets and galaxies. They observe the interaction between various objects which occupy it and the phenomena of their working in the space.

Why should one be an astrophysicist?

To someone who is curious and loves science and mathematics and, is prepared for an intellectual journey, becoming an Astrophysicist can be an ideal career choice. Analyzing how the laws of Chemistry and Physics uphold in the universe, figuring out the life cycle of galaxies, stars and planets put together is in brief what an astrophysicist would do.

How to become an astrophysicist?

To become a successful Astrophysicist the learning and training should begin from high school itself. Excelling in mathematics and science, will be crucial in securing a place in prestigious universities. Being a part of astronomy summer camps and internships, programs by various universities and space institutes such as NASA and ISRO can help in understanding the working of Astrophysicist.

BEST UNIVERSITIES FOR ASTROPHYSICS:

Princeton University Princeton, NJ

California Institute of Technology Pasadena, CA

Physical Research Laboratory, Gujarat, India



THE WORLD UNDER THE STARS

Just imagine, lying under the dark canvas of the night sky, counting and gazing the twinkling stars. Here's our recipe for a star-studded getaway just like this.

Things to carry for Stargazing along with common picnic essentials:

- Telescope and Binoculars
- Star maps through a smartphone app such as Star
- light
- Laser pointer to point out objects
- Lens cleaning tools
- Power bank for telescope and other electronic gadgets

NUBRA VALLEY, LADAKH

Nubra valley, in Ladakh will fulfill all the cravings for stargazing with finest view of sky. One can enjoy the desert ambience at a height of 10,000 ft above the sea level. The villages of Nubra has home stay facilities where you can enjoy the stargazing.

Nearest City: Bhuj, 71.7 Kms from Kutch.

SALT DESERT OF KUTCH, GUJARAT

The Rann of Kutch is the most famous and the biggest salt swamp in the world. The strange light effect known as Ghost Light can be experienced here. You can even experience one of the most beautiful night skies too. Indulge in astronomy activities and astro-photography here.

Nearest City: Bhuj, 71.7 Kms from Kutch.

KATAO, SIKKIM

Katao is located 15,000 ft above the sea level. It is known as the Switzerland of Sikkim and is the most incredible place in India for stargazing. The sky is clear and pollution free. This place is also famous for

snow covered mountains.

Nearest City: Lachung, 25.4 Kms from Katao and Gangtok, 144 Kms from Katao

MANDARMANI, KOLKATA

A small place near the seaside, Mandarmani is famous for weekend getaways. The best time to visit this place is during a new moon when the sky is clear with no pollution.

Nearest City: Kolkata, 180 Kms from Mandarmani.

COORG, KARNATAKA

Coorg is a good place for nature lovers who want a beautiful and quick break. This place also offers a beautiful night view of stars and is definitely a good weekend getaway. This place is known as the Scotland of India with sandalwood and teak wood forests, and tea and coffee plantation.

Nearest City: Mysore 120 Kms from Coorg



TOUCHDOWN

on Indian Ground

Kho-Kho

Kho kho is a run and touch game with origin as old as Mahabharata. It was played on 'raths' or chariots, and was known as Ratha. First ever Kho Kho competition was held in the year 1914. In 1959 first National Kho-Kho Championship was held under Kho Kho Federation of India.

Rules to be followed:

- The game consists of two teams and each team consists of 12 players.
- The game starts off with a toss and the team that wins the toss and decides to chase will have their 9 players enter the playground.
- All 9 players sit/kneel in the middle of the court facing opposite direction in a straight row.
- An innings consists of chasing and running for seven minutes of duration. Each match will consist of two innings.
- Chasers need to line up on the line down the middle, facing in alternate directions. They can only 'chase' on the side of the pitch they are facing and can only chase one at a time
- A runner goes out of the game if touched by a chaser.

Some Famous Players:



IMAGINE FEED:

- Kho-Kho associations are in all the 21 sports districts and train more than 2,500 players
- The first break, however, came in 2007, when Assam hosted the National Games

Just like you have your nationality and origin, sports and games have them too. Games like Kho-kho and Kabaddi are some of the oldest forms of Indian sports that dates back hundreds of years and demand a lot of sweat but are also a lot of fun.

Kabaddi

Kabaddi is a sport that may date back to 4000 years. It originated in Tamil Nadu. It was originally meant to develop self-defense and is popular in rural India. It's also popular in Nepal, Bangladesh, Sri Lanka, Japan and Pakistan.

Rules to be followed:

- Each team will consist of not more than 12 players with only 7 taking to the field at a time.
- At the start of the match, the winner of the toss gets the choice to have the first raid or no.
- While raiding, the raider must run into the opposition's half and tag one or more members of the opposite team and return to their own half of the pitch before they stop him.
- The player will be out of the game if the opposite team stops him from walking into his side of the team.

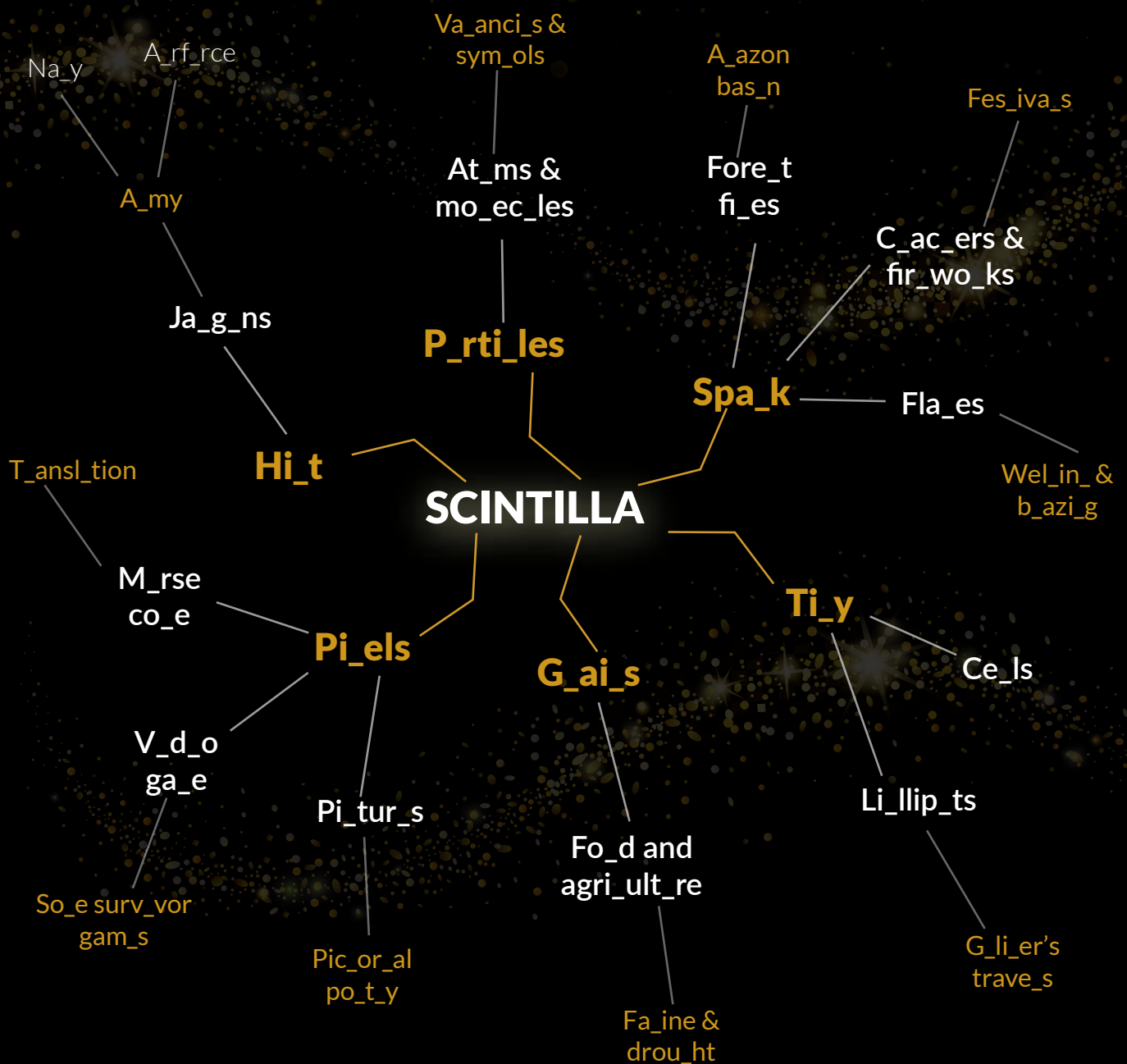
Some Famous Players:



- Kabaddi acquired worldwide recognition in the 1936 Berlin Olympics
- India is the only country that has won all the Kabaddi World Cups
- Kabaddi was included in the 2nd Asian Indoor games held at Macau in 2007.

SCINTILLA

Spark up your grey cells by filling up the blanks in our mind map for the next issue themed Scintilla





DESIGN A MASK FOR YOUR FAVOURITE SUPERHERO

The Universe is under a mighty threat from **Thanos**.
The **Avengers** got your back to save us from the destruction.

What if you could be a superhero too and join them? What would your mask look like?

WHAT TO DO?

- Pull all your imagination together.
- Design a vibrant superhero mask for yourself
- Along with the mask, list the superpowers and name of your alternate personality.
- Write about 100 words how he/she can fight Thanos to save us.

Send this to us on imagine.thinkedu@gmail.com

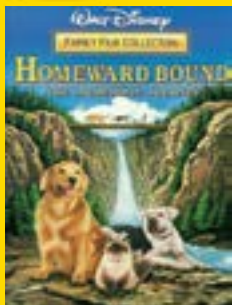
WIN

COOL BACK TO SCHOOL MERCHANDISE &
RS.1000 CASH PRIZE



THE PARABLES OF PURITY

When the power of love overcomes the love of power there will be peace. True happiness and harmony are achieved when knowledge, peace and love walk hand-in-hand, passing the light and driving away all the darkness in the world. This time we bring to you two heart warming and light hearted stories that make you realise that love and compassion are the real pillars of life.



Homeward Bound- The Incredible Journey (1993):

The story is about three pets, Chance, a fun-loving American bulldog pup; Sassy, a hilarious Himalayan cat who lives up to her name; and Shadow, a wise old golden retriever. It's based on a novel called 'The Incredible Story'

by Sheila Burnford. The adventure begins when their loving owners are forced to leave them in the temporary care of a friend who lives hundreds of miles away. But after some time, the animals get worried that their family members must be in trouble, so they decide to head for their home. On their way to home, the animals encounter incredible surprises and adventures from humans, beasts, and nature.



Positively Izzy (2018):

The story is about two girls, Izzy and Bri who are poles apart. They both go to the same middle school and their lives suddenly take a twist when both of them have to perform together in the school talent show. Izzy is a dreamer and she loves acting in skits and making up funny

stories. On a downside, she cannot focus enough on school work. Bri is excellent at grades and she wishes people would see there's more to her than just a report card. But she cannot break the shell around her and join a drama club. The story proves through different twists and turns that one should only be labeled after their own traits and capabilities.

Color Me Mine



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HOW IT WORKS



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Select a ceramic shape



PAINT

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PICK UP

Return for your product after we've glazed and fired it



ENJOY

Keep it for yourself or gift it to someone



WEBSITE
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COLOR ME MINE is the world's leading upscale art-as-entertainment studio. Offering unfinished ceramics and other craft media with over 150 franchises around 10 countries across the world. The products sold will include 400 different ceramic pieces including painted bisque figurines, bowls, plates, housewares, bath, kitchen and garden items as well as children's items, baby plates, photo transfers and more.

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